United States Patent [19]

Zeilinger

[11] **3,864,770**

[45] **Feb. 11, 1975**

[54] **BOAT HULL CONSTRUCTION**

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[22] Filed: **Oct. 31, 1973**

[21] Appl. No.: **411,284**

[52] **U.S. Cl.** ..... **9/6,** 9/1 R, 182/90

[51] **Int. Cl.** **B63b 3/00**

[58] **Field of Search** ..... 9/1 R, 6, 7; 114/66.5 R, 114/66.5 S; 182/90, 84

[56] **References Cited**

UNITED STATES PATENTS

2,398,131	4/1946	Bourne	9/6
2,488,183	11/1949	Garmont	114/66.5 R
2,519,519	8/1950	Vorbusch et al.	182/90
3,012,626	12/1961	Marryatt	182/84
3,388,446	6/1968	Phillips	9/6
3,584,704	6/1971	Eckmann	9/1 R

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[57] **ABSTRACT**

A boat hull side wall is formed with a plurality of vertically spaced finger and/or toe receiving slot recesses, which are disposed both above and below the normal water line of a boat when the boat is at rest. The slot recesses extend rearwardly along the hull side wall from a point forwardly of the intended point of side entry to the boat and open through the hull rear wall or transom. The forward end of at least those recesses disposed below the water line is gradually reduced in cross-sectional size or tapered to afford smooth flow transition between forward non-recessed and rearward recessed outer surface portions of the hull side wall.

4 Claims, 4 Drawing Figures

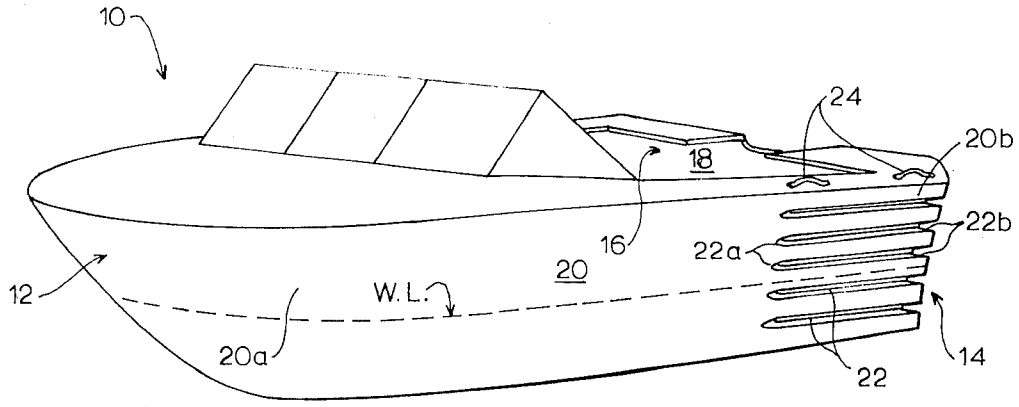


FIG. 1

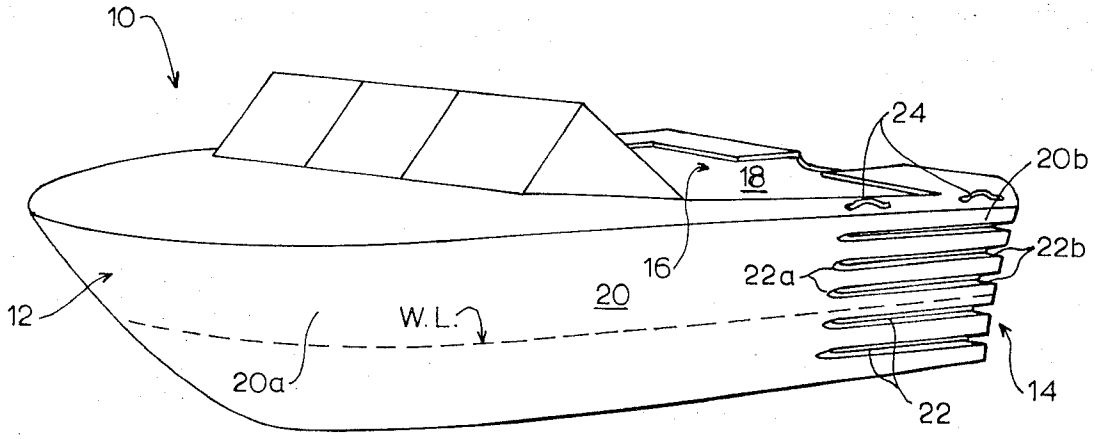


FIG. 2

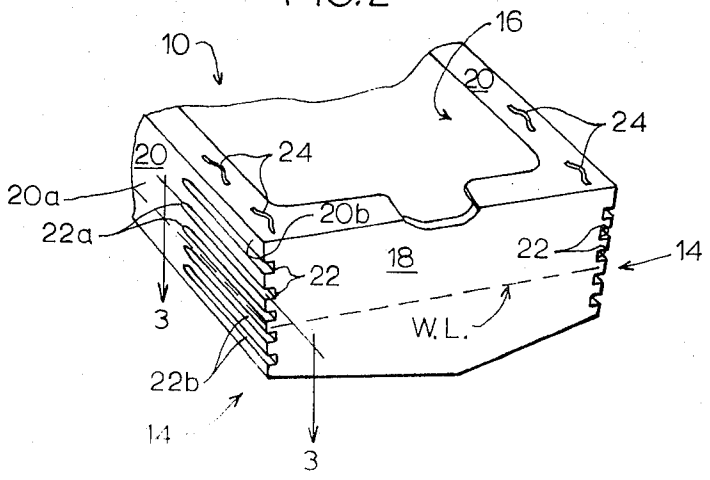


FIG. 3

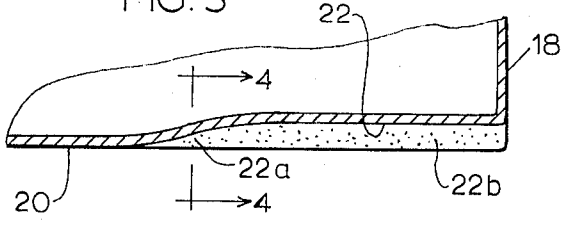
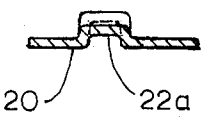


FIG. 4



BOAT HULL CONSTRUCTION

BACKGROUND OF THE INVENTION

It is extremely difficult to climb onto a boat from the water without the use of some sort of ladder, step or stirrup.

There are presently on the market many ladders, which are designed to be removably hung over the side of a boat hull, as an aid to boarding. These units are, however, normally of cumbersome construction and occupy valuable storage space when not in use.

To overcome the above mentioned storage problem, many proposals have also been made to provide a hinged section of the hull side, which opens to form steps into the boat, or to fit the boat with steps or stirrups, which are retractable through an opening provided in the hull side. However, these proposals may adversely effect the structural integrity of the boat hull side and their moving parts may be subject to destructive corrosion.

SUMMARY OF THE INVENTION

The present invention features a unique boat hull construction, which serves to define a permanently in place ladder for assisting a swimmer in climbing from the water onto a boat.

More specifically, in accordance with the present invention, a boat hull side wall is formed with a plurality of vertically spaced finger and/or toe receiving slot recesses, which are preferably disposed both above and below the normal water line of the boat when at rest. The slot recesses extend rearwardly along the hull side wall from a point forwardly of the intended point of side entry to the boat and open through the hull rear wall or transom. The forward end of at least those of the slot recesses, which are disposed below the water line, are gradually reduced in size or tapered to afford smooth flow transition between the forward nonrecessed and rearward recessed portions of the boat side hull.

In the preferred form of the present invention, the slot recesses are of essentially rectangular cross-sectional configuration and vertically spaced apart through a distance corresponding to that of a conventional stair riser. The tread or lower surface of each recess is preferably formed with a friction surface.

By forming the boarding ladder of the present invention as a permanent part of the boat hull side, it is always available for immediate use and there are no moving parts in need of repair or maintenance. Moreover, by employing slot recesses to define the tread or bearing parts of the ladder, there are no parts protruding beyond the side wall of the boat which might be injured during docking or cause injury to persons in the water.

Further, the preferred construction provides substantially no adverse influence on boat performance, and results in a boat hull design which is decorative and racey in appearance.

DRAWINGS

The nature and mode of operation of the present invention will now be more fully described in the following detailed description taken with the accompanying drawings wherein:

FIG. **1** is a front perspective view of a power boat incorporating the present invention;

FIG. **2** is a fragmentary rear perspective view of the boat shown in FIG. **1**;

FIG. **3** is a sectional view taken generally along line **3—3** in FIG. **2**; and

FIG. **4** is a sectional view taken generally along line **4—4** in FIG. **3**, but showing an alternative configuration of the forward ends of the slot recesses.

DETAILED DESCRIPTION

Refernce is now made particularly to FIGS. **1** and **2**, wherein a boat **10** is shown as having a hull **12** constructed in accordance with the present invention to provide a ladder **14** for use in assisting a swimmer in climbing from the water onto the boat. For purposes of illustration, boat **10** is shown as being a conventional outboard power boat, which is provided with a rear cockpit **16** partially bounded by a motor mounting transom forming hull rear wall **18** and gunwalls or hull side walls **20.** However, it will be understood that the present construction is adapted for use in other boat designs, such as for instance inboard power boats and sailboats.

Referring to FIGS. **1–3**, it will be understood that for the average size power boat hull construction, ladder **14** would comprise a plurality of essentially horizontally disposed, vertically spaced slot recesses **22**, which are formed in one or both of hull side walls **20** and arranged both above and below the normal water line (W.L.) of the boat when at rest in the water. The height and depth of the individual recesses **22** may vary as long as they are of sufficient size to receive and provide comfortable support for the fingers and/or toes of the swimmer. It is anticipated that an ideal height of each recess would be about 2 inches, whereas an ideal depth would be between about 3 and 4 inches. The vertical spacing between or step height of the recesses would preferably be between about 7 and 8 inches. Thus, the number of recesses provided in any given hull construction would depend upon the height of the gunwalls above water line W.L. In all cases, at least one recess would be provided below the water line and for very small boats, those above the water line could be omitted, particularly where suitable hand holds, such as cleats **24**, are fixed to the gunwalls in vertical alignment with the ladder.

In the presently preferred construction, the forward ends **22*a*** of slot recesses **22** are forwardly tapered or have a progressively reduced size or cross-sectional area so as to afford smooth water flow transition between the forward nonrecessed and rearward recessed outer surface portions **20*a*** and **20*b*** of hull side wall **20**, and the rearward ends **20*b*** of the recesses open through transom **18** in order to allow for unobstructed flow of water rearwardly through the recesses. As best shown in FIGS. **1** and **2**, rearward outer surface portions **20*b*** of hull side walls **20**, within which recesses **22** are located, are essentially vertically disposed, whereas forward outer surface portions **20*a*** are progressively contoured in a direction towards the bow, as is conventional with boats of the type illustrated. It is preferable from the standpoint of aesthetic appearance to taper the forward ends of all of the recesses. However, from the standpoint of boat performance, it is only necessary to taper forward ends of those recesses, which are disposed in the water during forward movement of the boat. The forward ends of the recesses may be tapered in both vertical and horizontal directions as indicated

in FIGS. 1–3, such that they assume a generally conically shaped configuration. Alternatively, the forward ends of the recesses may be tapered in only a horizontal direction, as indicated in FIG. 4, such that they assume a generally wedge shaped configuration.

From the standpoint of convenience, it is preferable to arrange the forward ends of slot recesses 22 forwardly of transom 18 through a distance at least approximating shoulder width in order to facilitate entry of the swimmer directly into the cockpit of the boat.

To facilitate fabrication of ladder 14, recesses 22 would preferably be of rectangular cross-sectional configuration, although the lower surface of each recess may be downwardly and inwardly inclined in order to reduce the possibility that the fingers and/or toes of a swimmer may slip out of the recess during use. Further, from the standpoint of safety, it is preferable to roughen or otherwise provide the lower surface of each of the recesses with a friction thread. However, the upper and rear or vertical surfaces of the recesses would preferably be smooth.

The present ladder construction permits same to be mold or otherwise formed as an integral part of hull side wall 20, with the result that the rear portion of the hull side wall is employed to define risers between adjacent slot recesses and the walls bounding the slot recesses are employed to define ribbed reinforcements for the hull side wall. Alternatively, ladder 14 may be separately formed and fixed within a recess defined by hull side wall 20, so long as the risers of the ladder are disposed flush with the hull side wall front portion 20*a*.

I claim:

1. In a boat construction having a rear cockpit bounded in part by hull side walls and a transversely extending rear wall, said hull side walls having forward and rearward outer surface portions, said rearward outer surface portions being characterized as being essentially vertically disposed, the improvement of a ladder associated with at least one of said rearward outer surface portions for assisting a swimmer in climbing from the water directly into said cockpit, which comprises in combination:

at least one slot recess formed in said one of said rearward outer surface portions and arranged below the water line of said boat when at rest in the water, said recess being horizontally elongated and having lower tread, upper and rear surfaces, said recess having a forwardly disposed end thereof characterized as being of progressively reduced cross-sectional area in a direction towards one of said forward outer surface portions associated with said one rearward outer surface portion for affording smooth water flow transition therebetween, said recess having a rearwardly disposed end thereof opening through an outer surface of said rear wall for allowing unobstructed flow of water rearwardly through said recess, and said recess is characterized as having a generally rectangular cross-sectional configuration and as being dimensioned to at least receive the fingers/toes of a swimmer and as extending forwardly of said rear wall through a distance at least approximating shoulder width of said swimmer in order to facilitate entry of said swimmer directly into said cockpit.

2. The improvement according to claim 1, wherein hand holds are fixed to said one of said side walls vertically above said ladder.

3. The improvement according to claim 1, wherein said upper and rear surfaces are smooth and said lower thread surface is formed with a friction tread.

4. The improvement according to claim 1, wherein said ladder includes a plurality of like configured slot recesses disposed at least one both above and below said water line of said boat when at rest in the water and formed in both of said rearward outer surface portions.

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